MINUTES OF THE 73rd EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 6th – 7th May, 2013 IN NEW DELHI.

COAL MINING PROJECTS

The 73rd meeting of the reconstituted EAC (T&C) was held on 6th – 7th May, 2013 in Scope Complex, New Delhi to consider the projects of coal mining sector. The list of participants of EAC members and the proponents are given at Annexure 1 and 2 respectively. The minutes of the 71st meeting of EAC (T&C) held 8th - 9th April, 2013 was confirmed.

The agenda items were taken up as given below:

73.1 Cluster VI mines (2 OC mines, 1 UG and 1 mixed mine of a combined production capacity of 5.87 MTPA with a peak capacity of 7.631 MTPA in a combined ML area of 876.55 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand - EC based on TOR granted on 30.09.2011

73.1.1 The proposal is for Cluster VI mines (2 OC mines, 1 UG and 1 mixed mine of a combined production capacity of 5.87 MTPA with a peak capacity of 7.631 MTPA in a combined ML area of 876.55 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand. The proponent made the presentation and informed that:

i. The proposal is neither new nor expansion. This project is the cluster VI group of mines which consists of 4 mines 2 OC, I UG and 1 UG-cum-OC mine, of which one mine is closed. The combined production capacity of the cluster is 5.87 MTPA with a peak capacity of 7.631 MTPA in a combined ML area of 876.55 ha. This cluster consists of mines which are taken over by BCCL from private mine owners after nationalization through Coal Mines Nationalization Act, 1972-73.

ii. The Ministry issued the TOR vide letter no J-11015/183/2011-IA.II (M) on 30th September, 2011.

iii. Details of mine are as under:

MINES IN CLUSTER- VI						
S.No	**Name of Mine**	**OC/UG**	**Production capacity (MTPA)**		**ML Area (ha)**	**Life of Mine (years)**
			Normative	**Peak**		
1	East Bassuriya Colliery	OC	1.500	1.950	141.07	**10**
2	BassuriyaColliery	UG	0.120	0.156	162.76	**>30**
3	GondudihKhasKusunda Colliery	OC	2.000	2.600	410	**25**
4.	Godhur Colliery	OC	2.000	2.6	162.72	**18**
		UG	0.250	0.325		**>30**
	Total		**5.87**	**7.631**	**876.55**	

iv. The land usage of the project for Pre-mining & Post- Mining are as follows:

COMBINED LAND USE OF CLUSTER -VI			
S.no	Type Land Use	Present Mining Land Use (ha)	Post- mining Land Use (ha)
1.	Running quarry		
	Backfilled	6.00	0.00
	Not Backfilled	46.16	0.00
2.	Abandoned quarry		
	Backfilled	92.36	0.00
	Not Backfilled	41.58	0.00
3.	External OB dump	32.84	0.00
4.	Service building/ mine infrastructure	25.29	0.00
5.	Coal dump	4.66	0.00
6.	Rail & Road	84.68	25.32
7.	Homestead land	120.12	39.52
8.	Agriculture land	0.00	0.00
9.	Forest land	0.00	0.00
10	Plantation	11.00	445.87
11.	Water body	25.25	92.01
12	Barren land	386.61	273.83
	Total	876.55 (851.26)	876.55

v. The total geological reserve is 209.341 MT. The mineable reserve is 151.16 M, The per cent of extraction would be 72 %.

vi. The method of mining in these mines shall be by Bord & Pillar in underground and Shovel dumper combination in opencast as stated in the EIA and EMP document.

vii. Mine areas is drained in the west by seasonal Ekra Nala flowing southerly and join Jarian nala and finally meet Katri River. In the east, mine area drained by Kari Jore (flowing southerly. Both Katri River and Kari Jore are tributaries of Damodar River flowing easterly at a distance of 8.50 km from cluster boundary towards south.

viii. The total estimated water requirement is 3811 m^3/d. The potable water would be 1205 m^3/d from bore well & industrial water 2606 m^3/d from mine sump and surface reservoir. The level of ground water ranges from 3.20 to 3.60 m.

ix. The Method of mining would be mixed ,Opencast & Underground mine. Opencast by shovel dumper combination requiring drilling and blasting & underground by Bord &Pillar method.

x. There are 8 external OB Dumps covering an area of 32.84 Ha. The height for both the dumps would be 16 m and the total quantity would be of 5.247 Mm^3. There is no internal dump. The final mine voids will have an area of 66.76 ha. with depth of 25 m bgl.

xi. **Subsidence Prediction:**Considering the geo-mining parameters as provided by Colliery Authority, subsidence prediction study has been done for the panels and it is proposed to be depillared in mine projection plans for different seams.. The site specific subsidence parameters, e.g. subsidence factor, angle of draw, non-effective width of the panels are not available for the mine. These values have been taken from subsidence data observed in nearby coalfields having similar geo-mining conditions. The anticipated maximum subsidence likely to occur over the mining area is 0.16m.The maximum possible slope and tensile strain likely to occur are 10.40 mm/m and 5.46 mm/m respectively. Surface cracks are likely to develop due to subsidence over the mining area which will be filled up properly and regularly by clay and stone chips (by dozing and compacting back filled dump areas) and thereafter with about 0.3m high clay heap over the cracks.

xii. **Fire mitigation measures:** The Jharia Master Plan, which consists of all the fire dousing projects/ plans, has been vetted by DGMS will be implemented. CMPDI, prepares fire dousing schemes submits to DGMS for approval. DGMS is also a monitoring and scrutinizing Agency constituted by the Hon'ble Supreme Court of India under the WP(PIL) 387/1997 i.e. Haradhan Roy Vs UoI

i. **Master Plan for dealing with fire, subsidence &rehabilitation :**Out of 595 unstable sites identified in the Marter Plan , 18 sites affected area of 0.28 KM^2 consisting of 1387 no. of houses/families are affected. The affected families will be rehabilitated in adjacent non coal bearing area at a cost of Rs. 10768.17 lakhs.

ii. R&R package, for the affected people who are to be shifted from endangered areas, has been proposed in the Master plan which has been approved both by Govt. of Jharkhand and Govt. of India. However, no employment will be offered for any rehabilitation under this Master Plan. R&R package is offered for safety of the people living in endangered areas and not for project implementation and mining of coal and thereby gaining any type of profit. The affected families will be rehabilitated & resettled in Nagrikalan and Tilatanr mouzas.

xiii. The seasonal data for ambient air quality has been documented for summer season (February 2012 to April 2012) and results at all stations are within prescribed limits.

xiv. The life of mine is 10-30 years. Maximum depth of the mines ranges from 141 to 190m. At the end of mine life, an area of 32.84 ha of the present external O.B. dump would be backfilled.

xv. **Transportation:** The transportation of coal from mine is currently by road to the siding. The existing Road-Rail transport network system is proposed to continue in view of the implementation of the Jharia Action Plan (for 10 years) and another 5 years gestation period after the completion of Jharia Action Plan for consolidation of the backfilled dug out fire areas and unstable areas is required. Thus the period of 15 years make the Phase-I. All mitigation measures (like covered trucks, green belting on either sides of the roads, enhanced water sprinkling, strengthening and maintaining the roads etc.) shall be adopted up to 15 years with the existing road-rail transport system. In Phase-II (after 15 years),BCCL shall implement conveyor-cum-rail transport to avoid movement of trucks within the cluster for coal transportation in Phase-II which shall start after 15 years from now wherein it is proposed to carry all coal transport by Rail and Conveyor belt, minimising the existing road transport system in all the mines of the cluster and would continue after 15 years. Loading of coal by pay loaders shall be discontinued. Adequate number of suitably designed off-take points shall be provided.

xvi. No R&R is involved. No of PAFs is 1387

xvii. **CSR Activity:** BCCL is formulating a detailed Corporate Social Responsibility (CSR) Action Plan through Tata Institute of Social Sciences (TISS), Mumbai which will consist of need-based base-line survey, CSR Action Plan, CSR Auditing and monitoring mechanism etc. Director (Per.), BCCL along with a team visited TISS/ National CSR Hub, Mumbai on 1^{8th} Jun, 2012 for finalising the MoU with TISS and National CSR Hub for conducting base-line survey, empanelment of NGOs and formulating the project specific CSR action plan for BCCL. TheAction Plan for Corporate Social Responsibility will include 5% of the retained earnings of the previous year subject to minimum of Rs. 5 per tonne of coal production of the previous year will be provided for Corporate Social Responsibilit**y** (CSR), an amount of Rs. 381.55 lakhs/year has been year marked for the CSR activities.

xviii. **Cost :** Total capital cost of the project is Rs. 62.37 Crore. The CSR cost is as per the latest CIL's Policy, the company will spend 5% of the retained earnings of the previous year subject to a minimum of Rs. 5/- per tonne of coal production . R&R Cost Rs. 10768.17 Lakhs. Environmental Management recurring cost is Rs. 399.00 lakhs per year.

xix. Approvals: Applied for CGWB on 27.11.2012 which is awaited. The Mine Closure Approval is under process. Since the collieries / mines of BCCL are taken over from the erstwhile private owners, the mine does not have structured mining plans.

xx. The Board's approval is not required as old mines mines taken over hence not required.

xxi. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xxii. **Forestry issues:** No forest area is involved for mining.

xxiii. Total Afforestation plan shall be implemented covering an area of 441.24 ha at the end of mining where reclaimed external OB dump 32.84 ha and internal OB Dump 120.34 ha. Green Belt over an area of 66.12 ha. Density of tree plantation 2500 trees/ ha of plants.

xxiv. **Legal issues:** State Govt./ Jharkhand State Pollution Control Board had issued closure orders for all the mines of BCCL in Aug., 2011 and March 2012 stating that BCCL is operating all its mines without the Environmental Clearance. BCCL had filed Writ Petition in the Hon'ble High Court of Jharkhand, Ranchi for legal relief against the closure of mines by JSPCB stating that BCCL had already initiated the process of Environmental Clearance in 2008 onwards. The cluster concept was approved in 2009 and that BCCL is completing all its EMP process well within the validity periods of two years stipulated in the Terms of Reference (TOR). The court had taken cognizance of the facts and granted "Status Quo" .

xxv. **Public Hearing:** The public hearing was held on 10.11.2012 at Dhanbad. The issues raised were regarding arrangement of drinking water, lighting arrangement, medical camp, employment, plantation, etc.

73.1.2 The Committee after detailed deliberations, has recommended project with the following additional conditions:

i. The two nallahs passing through the mines should be preserved and made functional to drain the water.

ii. The coal transport to the siding will continue by road to the siding within 2 km with pay loader loading into Rly. Wagons for a period of 5 years by which time the proposed silo, in Rly. Siding not being affected in the Jharia Action Plan will be constructed for RLS loading into railway wagons.

iii. As subsidence is on higher side in Godhur colliery, special attention should be given for control and monitoring of subsidence.

iv. All old dumps will be filled back in mine voids. At the end of mining there should not be any OBD and should be only one void which shall not exceed 30 mt deep.

v. An inflation in CSR

vi. Dhanbad action plan as CEPI be implanted where ever is applicable

vii. Since the cluster is situated close to Dhanbad, thick green belt and residential areas should be done along the periphery of ML area. Avenue plantation should be done along the roads which are used for coal transport and measures to arrest coal dust while transporting by covering the trucks and water sprinkling measures etc.

viii. Whereas laudable efforts have been made in drawing skill development programmes alongwith Planning Commission of GoI. All out efforts should be made to ensure that they are suitably employed either with the PP or elsewhere.

73.2 Sondiha OC-cum-UG Coalmine Project (1 MTPA peak in an ML area of 810 ha) of M/s Chhattisgarh Mineral Development Corp. Ltd., located in Dist. Sarguja, Chhattisgarh – EC based on TOR dated 23.12.2010 – Further Consideration

73.2.1 The proposal is for Sondiha OC-cum-UG Coalmine Project (1 MTPA peak in an ML area of 810 ha) of M/s Chhattisgarh Mineral Development Corp. Ltd., located in Dist. Sarguja, Chhattisgarh.

73.2.2 The proposal was considered in the 47th EAC meeting held on 23rd -24thApril 2012. The EAC sought additional information viz.: to explore the possibility for underground mining could be carried out in area with high forest density in proposed opencast area;

examine whether the top seam VII proposed to be mined by OC method could be left undisturbed; study carried out for examining the best options of mining vis-à-vis cost benefit analysis on the social and environmental aspects of the various mining technology; Since the area has high tribal population the proponent should consult the experts on tribal issue & to prepare tribal welfare, with specific allocation of funds for implementation of tribal development plan on long term basis; provide R& R Plan & CSR in English; social audit by institution such as the IIT and regular monitoring carried out on the implementation of CSR & R& R.; capital Budget for CSR should be raised from Rs.50 Lakhs to Rs. 2.5 Crores; to examine the use of Bhatgaon Railway siding with SECL Permission and the transportation of coal from nearest railway line on priority.

73.2.3 The proponent made the presentation and informed that:

i. It is a new OC-cum UG mine with a peak production of 1 MTPA in an ML area of 810 ha. Of the total ML area, 197.257 ha is forestland. 130.223 ha consist of Chote-Bade Jhadke jungle, 37.382 ha is Govt. land and 300.434 ha is private land (Adivasi (Tribal) land) and 144.710 ha is private land (non-tribal).

ii. TOR was granted by the MoEF vide letter no J-11015/331/2010-IA.II(M) dated 23rd December, 2010

iii. The land usage of the project will be as follows:

Pre mining:

Type	Area in ha
Agriculture land	299.24
Forest Land	327.48
Waste Land	145.9
Road	12.87
Surface water Bodies	17.34
Others	7.17
Total	**810.00**

Post Mining:

Purpose	Government		Private		Total
	Forest	Others	Agri.	Others	
	ha	ha	ha	ha	ha
Area to be excavated	213.29	6.34	100.25	49.13	369.01
Storage for top soil			4.6	0.4	5
Overburden / Dumps	4.5	7.07	78.62	29.81	120
Infrastructure (Workshop, Administrative Building, office and road etc)	-	-	5.49	2.01	7.50
Roads	0.08	0.20	2.49	1.23	4.00
Railways					
Green Belt /statuary barrier	1.33	0.11	7.71	-	9.15
Tailings pond (surface reservoir)	1.82	-	0.18	-	2
Township area	0.488	0.88	4.64	2.31	8.32
Other			2.27	1.23	3.50
Area untouched (includes underground area)	105.97	6.868	53.31	35.486	201.634
Total	**327.48**	**21.468**	**259.56**	**121.606**	**730.114**

iv. The total geological reserve is 50.423 MT. The mineable reserve is 37.633 MT,

extractable reserve is 32.743MT. The percent of extraction would be 94.99 % by O/C; 60.00% by U/G. The coal grades are A to F (Dominant Grade E & F) having stripping ratio of 1:13.79. Average Gradient is 1 in 14 (S- N). There will be total seven seams. The thickness of seams for O/C is 0.5 m and U/G is1.5 m. Maximum thickness of seams: 6.00m.

v. Moran River (2.5 km in NE), River in Ranhat RF (5.5 km in S) and Andhar Nadi (4.9 in NW) are flowing away from the ML area away between 2.5 to 5.5. km distance. Other Water bodies such as Andharwa nala, Kharhara nala; Sukhnaiya nala; Jabar nala; Sarbahar nala; Jhoj nala are also flowing away between 4- 7 km distance.

vi. The total water requirement is 1103 m^3/d (645 m^3/day mine water is for dust suppression, plantation, workshop and 485 cum/day is for drinking water/potable water from bore well).

vii. Mining of coal by opencast mining method is proposed to start from 1st year of operation. The extraction of coal by underground mining method will start from 16th year onwards alongwith extraction of coal by opencast mining method. Therefore, from 16th year onwards extraction of coal will be by combination opencast and underground mining method.

viii. There is one external OB Dump covering an area of 120 Ha. The height for dumps would be 60 m. The total quantity of 50.96 mm^3. The year of back filling would start from 3 years. There is internal OB Dumps covering an area of 203.56 Ha. The total quantity of 327.22 mm^3. The final mine voids will have an area of 164.45 ha. and depth 40 m bgl.

ix. The seasonal data for ambient air quality has been documented for one season (March 2010 to May 2010) and results at all stations are within prescribed limits.

x. Life of the mine is 36 years for the OC-cum-UG mining; UG mining will commence production from 16th year of operation.

xi. **CSR issues:** The capital budget for CSR has been raised from Rs. 50 lakhs to Rs 2.50 crores.

xii. **Transportation:** Transportation of coal would be by tippers and OB by dumpers. The coal would be transported from the mine by road to the nearest railway siding situated 100km away at Bisrampur.

xiii. R&R involves about 760 PAF.

xiv. Total capital cost of the project is Rs.575 Crores. The cost of production would be Rs. 1070/Tone. The CSR cost is Rs. 25/- per tonne of coal production. R&R Cost Rs. 30 crore. Environmental Management Cost (Capital Rs 10.20 Crores;Recurringcost-1.28Crores/annum)

xv. Approvals: Ground water clearance from CGWB dated 15th Dec, 2011. Mine plan approval obtained on 6th July, 201.The Board's approval was on 26.03.2011

xvi. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xvii. **Forestry issues:** 388.135 ha of forest area involved for mining.Total forest land for which Stage-1 FC is available, vide letter no. 8-50/2012-FC dated 4th March 2013.

xviii. Total Afforestation plan shall be implemented at the end of mining where reclaimed external OB dump of 120 ha and internal OB Dump 203.56 ha. Green Belt will be over an area of 9.15 ha and the density of tree plantation would be 2500 trees/ ha of plants.

xix. **Legal issues:** No legal issue is pending. There are no court cases/ violation pending with the project proponent.

xx. **Public hearing:** The public hearing was held on 20.12.2011. The issues raised were regarding Compensation as per R&R, employment, education, healthcare facility, greenbelt vocational training, etc.

xxi. The proponent had submitted the report of the study to the MoEF, vide letter No. 1180 CMDC/ 2013 dated 01.02.2013.The proponent informed the Committee that it has engaged experts from IIT (BHU), Varanasi to examine the feasibility of the underground mining in proposed opencast area vis-à-vis evaluation of alternative mining methods and social cost benefit analysis. The

study indicates that the net geological reserve is 31.40 MT. However, the extractable reserve would be 27.58 MT by Open cast mining in proposed and 2.44 MT would be by underground mining methods. Therefore, the proponent has concluded that underground mining in proposed opencast area is not the preferred mode of mining on technological ground due to insufficient quantity in workable thickness; impact of underground mining on forest, UG mining will result into subsidence and wide crack (> 200mm) at the surface. The coal seams will breathe air through these cracks and will lead to underground fire; safety hazards to workmen due to shale roof.

xxii. The study concluded that underground mining is not technically feasible and practical in the proposed opencast area and therefore, the topmost seam cannot be left undisturbed.

xxiii. With regard to the social-cost-benefit issues, thebest option of mining vis-a-vis cost benefit analysis on social & environmental aspect of various mining technology was carried out by IIT (BHU), Varanasi, who suggested that total underground mining is not technically feasible. From Social-Cost & Benefit point of view, the project is sustainable with a combination opencast & underground mining. The proponent had submitted the report of the study to the MoEF, vide letter No. 1180 CMDC/ 2013 dated 01.02.2013.The proponent has informed the Committee that it has engaged experts from IIT (BHU), Varanasi to examine the feasibility of the underground mining in proposed opencast area vis-à-vis evaluation of alternative mining methods and social cost benefit analysis .

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xxv. The study concluded that underground mining is not technically feasible and practical in the proposed opencast area and therefore, the topmost seam cannot be left undisturbed.

xxvi. The Tribal Development plan has been prepared as part of R & R plan which was submitted for Environmental Clearance vide letter no/1554/CMDC/2011-12 dated 28.03.2012. The Tribal Welfare Plan has been revisited in line with the different Guidelines issued by Govt. of India, World Bank (WB), Asian Development Bank (ADB) etc. for addressing issues related to Tribal Population affected by a project and informal discussion with experts on tribal issues. The framework of the Tribal Development Plan presented has been prepared conforming Indigenous People Development Plan (IPDP) of ADB & WB. As regard to examine the use of Bhatgaon railway siding with the permission of SECL, the coal produced from Sondiha coal block will be sold at pithead to small and nearby consumers. Therefore, the transportation of coal will be carried out by consumers by themselves from pithead to their site of consumption.

73.2.2 The EAC received a letter from an NGO sending its views on the proposal, which include that the project is in a small coalfield in virgin forest; Tamor Pingla Wildlife Sanctuary is within 10 km; Elephant Corridor;–Mining would increase man-elephant conflict; River within 2.5 km of the project and will lead to water contamination.

73.2.3 The proponent has responded to these views which include the following:-

i. While Tatapani-Ramkola Coalfield is in the virgin forest areas of Surguja and is not opened up, but is not true that the amount of coal reserve/Geological reserve is also very small which is evident from the fact stated that as per the statistic the total Geological reserves of 46452.02 Million Tonnes in an area of 6655 sq.km, Therefore, the

density of geological reserve per sq km of SECL is 6.98 Million tonnes/sq km. Similarly, the density of geological Reserve of Tatapani-Ramakola coal field is 6.22 Million/Sq.km, hence there is no significant variation in the density of Geological reserve compared to total SECL Coal Field Area. Compared to Ramkola-Tatapani coalfield the other coalfields are extensively explored. Therefore the criteria for compression of coalfields on the basis of Geological Reserve per sq. km. is not justified. It can be justified if all the coal blocks are fully explored.

ii. By not allowing the opening of Sondiha Coal Block will debar the local small industries from their coal requirement.

iii. The project site lies well within 10 km radius of Tamor Pingla Wildlife Sanctuary and within 12 km radius from Semarsot Wildlife Sanctuary. Both the sanctuaries have good population of Elephants.

iv. Tigers have previously been reported from both these protected areas and are also mentioned in the district's website. Both of the Sanctuaries boasts a myriad biodiversity which includes Scheduled I species like Elephant, Sloth Bear, Pangolin, Monitor Lizard, Peafowl which are also mentioned in the EIA report by the project proponent.

v. Tamor Pingla is home to another Scheduled-I Species Gaur or Indian Bison and leopards. The same is mentioned in the district's webpage with photograph. Other animals found here include Chital, Sambar, Jungle Cat, Chinkara, Wild Board, Wild Dog etc. So much of wildlife finds refuge in the forest area proposed to be mined.

vi. The project site does not lie well within 10 kilometer radius of Tamor Pingla wild life sanctuary which is evident from the vegetation map 64M-2 issued by the Chhattisgarh Forest Department and certified by the DFO of North Surguja Division, Ambikapur, Chhattisgarh clearly shows that the boundary of Tamor pingla is not within the radius of 10 kilometer from the mining lease boundary **.**

vii. The issues of tiger and other schedule-I flora and fauna are related to the protected area (i.e. Tamorpingla and Samarsot wild life sanctuaries) and both these protected areas are away for the radius of 10 kilometer from the project site. Therefore, it is not relevant in the instant case.

viii. The proponent has also denied that the wildlife finds refuge in the forest area proposed to be mined. As per authenticated vegetation map of the area under Sondiha Coal Mining Project, protected forest area to the tune of 257.915 ha falls in 3 compartments i.e. P208, P209 and P205. The forest area that will be felled for mining within the mining lease area isolated are small patches of forest and not connected to any continuous patch of forest. The majority of the area in these compartments are either open forest (yellow color) or non-forest (white color). Therefore, the wild animals will avoid taking refuge in this area as there is no sufficient protection/fodder/ food/water for wild animals in these compartments to take refuge and the area in and around these compartment are populated or crop land and therefore, a deterrent for the wild animal to take refuge in these forest compartment. However, as directed by EAC during issue of TOR (point xiv) for the project, a study report "Flora & Fauna, Wild Life Conservation and Management Plan for Sondiha Coal Block" harnessing all related information within buffer zone (10 km radius of the project) has been prepared by subject matter expert along with a budget for conservation of for flora and fauna on long term basis. This plan along with the provision budget of Rs. 5.470 for conservation measures has been already been approved by the Govt. of CG vide Van Pra/06 dated Raipur, 04/01/2013.

ix. The CMDC has already identified the vulnerable points on the front of wild life conservation and all such vulnerabilities will be addressed through implementation of said approved Wild Life Management Plan.

x. The proponent has denied that the significant forest area of 197.257 ha. is of the density of 0.04 and it is an important elephant corridor the entire area of 388.138 Ha. [Protected forest - 257.915 Ha and Revenue Forest - 130.223 Ha.] for which Stage-I clearance has been granted is of the density ranging from 0.2 to 0.4, which is based on the authenticated records submitted by the State Forest Department for processing of the Stage-I approval. Also, under compensatory afforestation (CA) required under Forest Conservation Act' 1980, diverted forest land will be compensated by equal amount of

land for CA along with plan for plantation during the lifetime of the mine. This will create a much better forest cover.

xi. The proponent has referred to the report "*Right of Passage: Elephant Corridors of India*" which has primarily identified 88 elephants corridor in India. The Elephant Task Force which published its report on August 31, 2010 named "*Gajah – Securing the Future for Elephants in India*" primarily recommended that the 88 elephant corridors have been identified in the Report "Right of Passage: elephant corridors of India" (should be notified as state elephant corridors by respective State Government and declared as ecological sensitive area. It imperative to mention here that the list of 88 elephant corridors mentioned in the report does not include any such corridor in the area in question.

xii. However the experts in preparation of the Wildlife Management Plan have taken into account the presence of elephants/HEC instances in the core and buffer zone for the last 10 years and accordingly prepared the management plan for reduction of HEC and thereby conservation of Elephants. This plan as stated above has been approved by the State Forest Department.

xiii. The question of dependencies of the wild animals and tribal communities for drinking water has also been studied by experts as part of EIA/EMP which concluded that no adverse impact will be on the river flow due to mining of Sondiha Coal Block. Therefore CMDC is in opinion that the concern on availability of drinking water from Moran River for wild animals and human population is in general not correct. The anticipated sources water pollutions have been carefully identified and it is imperative that as there will not be any discharge of effluent from the facility and colony area since recirculation and reuse of treated waste water will be followed. Therefore negligible impact is envisaged on the surface as well ground water quality. Several measures have been proposed in EIA/EMP for water pollution control, garland drains along the periphery of the mining lease boundary The time tested technique such as lime dosing along with organic fertilizers, of the surface soils prior to plantation and in consequent years, will remedy the pH imbalance. Mitigative measures were also suggested to abate water pollution.

xiv. Rs. 60 lacs has been committed for creation of water hole/ water bodies and maintenance of 8 nos of water source for wild animals exclusively in the approved Flora & Fauna Plan as stated above. Extensive provision for drinking water for population in the core and buffer zone has been made in the budgetary allocation every year under approved R & R Plan by Gram Sabhas and District Level Committee on R & R which under process for final approval from Govt of Chhatisgarh. Till date 14 nos of boreholes have been drilled amounting approximately Rs.20 Lakhs in the core zone and quality of water is potable which has been appreciated by the local people.

xv. Most of the population in the project area belongs to schedule tribes and their main source of lively hood is agriculture and non-timber forest products like Tendu leaves etc. Due to opening of coal mining project, there will be noise, air and sound pollution in the area. CMDC has taken adequate care to protect the lively hood of the project affected population and to reduce the noise, air and sound pollution which include :approval has been obtained from concerned gram sabhas by calling a gram sabha under the PESA ACT 1996 and Forest Right Act-2005.

xvi. The R&R Plan has to be approved by three levels (i.e. at the level of Gram Panchayat - Through Gram Sabha, at the level of district and at at the level of State.

xvii. The R&R Plan of the CMDC is approved from all the three levels and copy of the R&R Plan of CMDC.

xviii. A Social Cost Benefit Analysis has been carried out. and the same was submitted to the Ministry vide CMDC's letter dated 01.02.2013**.**

xix. So for as the noise pollution, air pollution is concerned the preventive measure to be adopted by CMDC to reduce this pollutions has been explained in detailed by us during public hearing and also the details have been incorporated in our EIA/EMP Report.

73.2.4 The Committee considered the proposal and sought the following information for further consideration:

i. As per the Stage- 1 FC, phase wise mining has been suggested. The Committee suggested that the PP should provide the details of phase-wise mining (as mentioned in clause (xiii) of para 2 of the FC no. 8-50/2012-FC dated 4.3.2013)
ii. The CSR capital cost is Rs. 3 crores and the recurring cost is Rs. 1.7 cr per annum, which should be adjusted as per the annual inflation.
iii. It has been brought to the notice of the Committee that the ML area is located within the radius Tamul-Pingal wild life sanctuary and is within 12 km of SEMARSOT wild life sanctuary. In the light of this, the Committee has suggested that the proponent should submit a map showing the wild life sanctuary and the project area. The distance should be clearly demarcated and authenticated by the Chief wild life warden.
iv. Since the project is surrounded by dense forest and the elephant corridor, the details conservation plan with budgetary provision alongwith the action plan be submitted to the Committee for further consideration.
v. The additional responses, if any, to the views of the NGO be also submitted.
vi. The Committee suggested that a detailed Action Plan for the welfare of the tribal people in consultation with reputed expert in the area of tribal issue in the State of Chhtaisgarh and MP.

73.3 Basundhara Coal Washery (10 MTPA Peak) M/s Mahanadi Coalfields Ltd., located in Dist. Sundergarh, Orissa – TOR - Extension of TOR Validity

73.3.1 The proposal is for extension of validity of TOR of Basundhara Coal Washery (10 MTPA Peak) of M/s Mahanadi Coalfields Ltd., located in Dist. Sundergarh, Orissa. The Project Proponent vide, it letter MCL/HQ/Envt/F-73/2013/3466 dated 29/04/2013, have withdrawn the application for extension of TOR validity and did not attend the meeting.

73.4 Bijari OCP of M/s South Eaten Coalfields Ltd., (2.25 MTPA) Dist., Korba Chhattisgarh – TOR - (Extension of validity TOR issued on 18.11.2008)

73.4.1 The proposal is for extension of TOR validity to Bijari OCP of M/s South Eaten Coalfields Ltd., (2.25 MTPA) Dist., Korba Chhattisgarh. Extension of validity of TOR was issued on 28.11.2008.

73.4.2. The proponent made the presentation and informed that:

i. The proposal was earlier considered in 33rd EAC meeting held on 20th -21st October, 2008 and TOR was granted on 28.11.2008.
ii. The proponent requested for extension for validity as holding public consultation was beyond the control of project proponent. The public hearing was conducted by the SPCB two days before the EAC meeting. Therefore, requested to extend the validity of TOR by an additional period of two years.

73.4.3 The Committee was of the view that public hearing is an important part of the EIA/EMP process without which further consideration of the proposal is not possible.

73.4.4 The Committee **recommended** for granting the extension of validity of the ToR by one year i.e. upto 30 May, 2014. However, the validity of ToR is may be extended in the line of MOEF O. M. NO. J -11013 / 41 / 2006 – IA.II (M) dated 22.03.2010. The OM states that "… it has been decided that from 01.04.2010, the prescribed TORs would be valid for a period of two years for submission of the EIA/EMP Reports, after public consultation where so required. This period will be extendable to the 3rd year, based on proper justification and approval of the EAC/SEAC, as the case may be. Thus, an outer limit of three years has been prescribed for their validity of TORs with effect from 01.04.2010. In case of the proposals, which had been granted TORs prior to the issue of this O.M., the EIA/EMP reports should be submitted, after public consultation where so required, no later than four years from the date of the grant of the TORs, with primary data not older than three years".

73.5 Mahavir Coal Washery (5 MTPA) M/s Mahavir Coal Washeries Pvt. Ltd., (MCWPL) District Raigarh, Chhattisgarh - Modification in TOR condition.

73.5.1 The proposal is for Mahavir Coal Washery for setting up of 5 MTPA capacity by M/s Mahavir Coal Washeries Pvt. Ltd., (MCWPL) in district Raigarh, Chhattisgarh . The TOR was issued on 09/02/2012.The proponent has requested for modification of conditions in the TOR.

73.5.2. The proponent made a presentation and informed that:

i. It is a new Independent coal washery based on wet beneficiation process for modification of TOR.
ii. The land required for proposed washery is 22.20 ha (54.84 acres) and is in the process of acquisition through the Government of Chhattisgarh. The present land use is mostly agricultural area not under cultivation with vegetative cover
iii. The total Cost of the project is Rs. 54.15 Crore excluding Rs. 12 – 14 Crore for railway siding.
iv. Approx. 59 m^3/ hour from ground water resources with prior approval of Competent Authority. Stage of ground water development is about 14.71%. Area falls in "safe zone".
v. The Ambient Air Quality seasonal data has been documented for Winter Season (December 2011 – February – 2012). The levels are well within the National Ambient Air Quality Standards.
vi. There are 13 reserved & 5 protected forests fall within 15 km around the project site.
vii. Transportation: Transportation of coal will be by onlydiversion of coal from the existing road transportation route (Baroud – Gharghora – Chhal – Robertson / Bilaspur and Chhal – Robertson / Bilaspur – Ambikapur) to the washery for a period of 4-5 years. By this time railway siding will be in position. Transportation of raw coal, clean coal, middling and rejects will be by tarpaulin covered high capacity trucks of 25T-30T until the proposed rail link is established.
viii. There is no R & R involved. No of PAFs.
ix. Cost: Total capital cost of the project is Rs. 68 Crore including railway siding. Operating cost of coal washing per tonne of raw coal throughput is Rs. 50.00, which does not include interest and depreciation components. The CSR cost is Rs. 5 Lakhs. Environmental Management Cost is Rs. 80 lakhs and recurring cost isRs 9.6 lakhs / annum.
x. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
xi. **Forestry issues:** No forest area involved in Mining.

73.5.3 The proponent was granted ToR on 09.02.2012 and a modified ToR on 27 April, 2012. The proponent in its letters dated 17 July and 14 August, 2012 has requested for clarification on conditions no.(viii) stipulated in the ToR. The proponent has now sought clarification w..r.t. para (2) of the modified ToR which states that "…Committee *desired* that coal transport from mine to the washery should be by closed conveyor and not by road. The proponent shall in addition to the conditions stipulated in the ToR dated 9.2.2012 shall *examine* coal transport from mine to the washery by closed conveyor and not by road.

73.5.4 The proposal was re-considered by EAC on 17th September, 2012 wherein additional information and clarifications were sought viz. (i) The MOU signed with the potential mine owners for getting coal from Baroud & Chhal mines of SECL & TRN Energy Power Plant should be submitted; (ii) Details of survey by RITES and location of railway siding should be provided; (iii) Details of Railway Plan with time frame, washery Plan, investment etc. should be provided; (iv) Details of coal end-user should be provided. The proponent responded that:

i. In Raigarh region, mostly coal mines are owned by SECL. Private mines are also coming up. MCWPL has no direct tie-up with the SECL mines, potential mine owners, for coal beneficiation. Therefore, signing of MOU with SECL is not applicable to MCWPL project. Source of coal for M/s TRN Energy Ltd. power plant at Bhengari is SECL mines. SECL coal mines are located within 1000 km distance from the Power

Plant site , use of washed coal is not mandatory for them. Signing of MOU between MCWPL and TRN Energy Ltd. is also not applicable. MCWPL proposal is to establish an independent coal washery project using wet process to beneficiate coal on behalf of the willing clients having linkage and / or purchasing coal through E-Auction and also own coal purchase through e-auction from Chhal and Baroud mines of Raigarh area of SECL.

ii. Chhattisgarh Government has formed a Special Purpose Vehicle (SPV) for construction of Eastern corridor and East-West corridor in the State under the Rail Corridor project. The Eastern corridor is proposed from Bhupdevpur via Gharghora to Dharmjaigarh. A preliminary inspection of 63 km on this corridor has already been completed. TRN Energy power plant site and MCWPL proposed washery site would require rail link from the upcoming Eastern rail corridor. MOUs have been signed among the Principal Secretary (Transport) of Chhattisgarh, Director (Finance) of SECL and Managing Director of IRCON. Major mining operations of SECL are in these corridors. Development of the corridors will facilitate movement of passengers as well as freight traffic mainly coal. Eastern corridor is proposed from Bhupdevpur to Dharamjaigarh via Gharghora. A preliminary inspection of the stretch has been completed. East-West corridor is proposed from Dharamjaigarh to Korba, Gevra Road – Dipika – Katghora – Sindurgarh – Pasan – Pendra Road. This section will cover 122 km stretch. The inspection of the entire route has been done. Reporting inDainikBhaskar newspaper of 16.12.12 indicates that work on first phase of the rail corridor has begun. GM, SECR expects fast progress in next two months. All the concerned companies have opened their offices in Raigarh.

iii. Chhal and Baroud mines coal is being transported by road. MCWPL proposal involves only diversion of coal on behalf of willing clients for beneficiation without any additional impact on traffic load. As and when found economical, MCWPL may also purchase coal through e-auction from these mines for washing.

iv. The Chhattisgarh Government has formed a Special Purpose Vehicle (SPV) for construction of Eastern corridor and East-West corridor in the State under the Rail Corridor project. The Eastern corridor is proposed from Bhupdevpur via Gharghora to Dharmjaigarh. A preliminary inspection of this corridor has been done. TRN Energy power plant site and MCWPL proposed washery site would require rail link from the upcoming Eastern rail corridor. MCWPL has agreed to the recommendation of Hon'ble Committee on establishment of railway siding. The proposal envisages only diversion of coal from the exiting road transportation route to the washery for a period of 4-5 years. By this time, railway siding will be in position. Transportation of raw coal, clean coal, middling and rejects will be by tarpaulin covered high capacity trucks of 25T-30T until the proposed rail link is established.

v. The proponent has informed that the Cabinet Committee on Economic Affairs has approved the construction of a new broad gauge line between Raigarh (Mand Colliery) to Bhupdeopur Railway Station of length of 63 km at a cost of Rs.379.08 crore to be funded through a Joint Venture (JV) consisting of IRCON International Ltd. (a Railway PSU) and other stakeholders - M/s. South Eastern Coalfields Ltd.(SECL) and Government of Chhattisgarh. IRCON will spearhead the process of formation of a Special Purpose Vehicle (SPV) with 26 percent equity and the Government of Chhattisgarh will transfer Government land free of cost. The Government of Chhattisgarh will thus participate to the level of 10 percent in equity, either through capitalization of land or through cash contribution, and SECL will take the balance equity.

73.5.5 The Committee after a detailed deliberations, has recommended that para (2) of the modified ToR which states that "…Committee *desired* that coal transport from mine to the washery should be by closed conveyor and not by road. The proponent shall in addition to the conditions stipulated in the ToR dated 9.2.2012 shall *examine* coal transport from mine to the washery by closed conveyor and not by road" be replaced with the following conditions:

(i) The coal should be transported in a mechanically covered trucks over a period not more than of 5 years or till the railway siding comes up whichever is earlier;

(ii) MoU with the end users shall be submitted to the MoEF at the time of the consideration for the EC.

73.6 12 MTPA coal washery and washery reject coal based CFBC Boiler Power Plant of (Max. Capacity 375 MW) M/s Maharashtra State Power Generation Co.Ltd., Dist. Chandrapur, Maharashtra – TOR

The Project proponent did not attend the meeting.

73.7 Parsoda Opencast Coal Mine Project of (0.80 MTPA normative, 1.04 MTPA peak over 611.83 ha) of M/s Western Coalfields Ltd., Dist. Yavatmal, Maharashtra –TOR

73.7.1 The proposal is for Parsoda Opencast Coal Mine Project of (0.80 MTPA normative, 1.04 MTPA peak over 611.83 ha) of M/s Western Coalfields Ltd., Dist. Yavatmal, Maharashtra. The proponent made the presentation and informed that:

i. It is a new proposal for TOR. The land usage of the project will be as follows Pre-mining:

S.N.	LAND USE	Within ML Area (ha)	Outside ML Area (ha)	Total
1	Agricultural land	590.49	15	605.49
2	Forest land	Nil	Nil	Nil
3	Waste land/Govt. land	4.84	Nil	4.84
4	Grazing land	Nil	Nil	Nil
5	Surface water bodies	Nil	Nil	Nil
6	Settlements	1.50	Nil	1.50
7	Others specify)	Nil	Nil	Nil
	Total	596.83	15.00	611.83

Post-mining:

S. N.	Land use post mining	Land use (ha)				
		Plantation	Water Body	Public use	Undis-turbed	Total
1	External OB Dump	69.00	-	-	-	69.00
2	Top soil dump	-	-	-	-	-
3	Excavation	40.00	103.34	-	48.00	191.34
4	Roads	1.15	-	1.80	-	2.95
5	Built up area	-	-	82.05	-	82.05
6	Green Belt	-	-	-	-	-
7	Undisturbed Area	148.85	-	-	67.64	216.49
8	Embankment around quarry	-	-	-	50.00	50.00
	Total	259.00	103.34	83.85	165.64	611.83

Core Area:

S.N.	Particulars	Total Land (ha)
1	Quarry Area	191.34
2	Embankment	50.00
3	External OB dump	69.00
4	Road/Infrastructure	70.00
5	Area needed for river diversion and blasting zone	194.49
6	Vidarbha river diversion	22.00
7	Colony	5.00

8	Railway Siding	5.00
9	Land required for Kumberkhani village rehabilitation	5.00
	Total Land	611.83

ii. The total geological reserve is 13.362 MT. The mineable reserve is 8.33 MT extractable reserve is 8.33MT. The per cent of extraction would be 62.34%. The coal grade is G-9 havingstripping ratio of 8.46m3/t. Average Gradient is 1 in 5 to 1 in 1. There will be total two seams. The thickness of seams ranges from 1.25 to 5.0 m.

iii. The Vidharbha River flows south easterly over the Parsoda Block. The existing river needs to be diverted to extract the coal. The length of river diversion is tentatively assessed 5.5 km. However, the exact route of the proposed diversion including its width and depth needs to be verified while designing the river diversion by the competent agency.

iv. The total water requirement for project site will be 337 m^3/d. The level range of ground water level for pre-monsoon 5.60m -10.30 m & Post Monsoon 3.5m-7.60 m (bgl).

v. The method of mining would be mechanized opencast by shovel dumper combination requiring drilling and blasting.

vi. There is one external OB Dump covering an area of 69 Ha with the height of 70 m and with the total quantity of 21.32 mm^3. The year of back filling would be 7 years. There are two internal dumps covering an area of 59 ha area,29.3 ha area respectively having height upto ground level & 70 m above ground level respectively with the quantity of 43.75 mm^3. The final mine voids will have over an area of 103.34 ha. with initial depth of 15m and final depth of 85 m and are proposed to be converted into water body.

vii. The data on AAQ will be generated after the TOR is received.

viii. The life of mine is 16 years.

ix. Transportation: The transportation of coal from mine pit to surface will be by dumper and from siding to loading will be by pay loader. Transportation of Coal will be by dumpers.

x. There is no R & R involved. The no of PAFs are 60.

xi. CSR activities would be subject to minimum Rs. 5/T of coal extracted

xii. **Cost:** Total capital cost of the project is Rs. 451.0397 crore. The cost of production would be Rs. 2437.23 / Tonne at 85 % of mine capacity notified price. The CSR cost is Rs. 5/t, R&R Cost is Rs. 6.47 crores. The Environmental Management Cost is Rs. 60.00 lakhs and Revenue cost would beat the rate of Rs. 5.74 /tonne.

xiii. Approvals: Ground water clearance is not applicable as the project area does not fall in the zone specified by CGWA for ground water regulation. Approval of mine plans: The WCL Board has approved the project 11.10.2012. The mine closure approval has been obtained on 11.10.2012.

xiv. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xv. Forestry issues: No forest area involved in mining.

xvi. Total Afforestation plan shall be implemented covering an area of 109 ha at the end of mining will be reclaimed (external OB dump of 69 ha and internal OB Dump of 40 ha) .The green belt will be over an area of 259 ha with the density of tree plantation in 2500 trees/ ha.

xvii. There are no court cases/ violation pending with the project proponent.

73.7.2 The EAC has received a letter from an NGO sending its views on the proposal, which include that the river, which supports many aquatic and riparian-dwelling organisms are adapted to the seasonal and inter-annual variations, is proposed to be diverted that will cause environmental changes on the lower river and in the region along the diversion route and the ecology of the area would change. The chemical composition of the water from the mine operations often changes due to higher concentrations of sulphur, soluble salts and/or contact with oxidised pyretic materials, which can lead to increased acidity. Water in the Vidarbha river will get polluted due to leaching from overburden dumps, discharge of pumped out mine water, and other activities in the vicinity of the water bodies. Impact of noise and air pollution on wildlife and human being

removal of vegetation from the area designated for mining and other purposes produces dust which when air-born causes an increase in the concentration of SPM in the surrounding air

73.7.3 The Committee after a detailed deliberation has asked the proponent to furnish the following information for further consideration of the proposal:

i. The diversion of Vidharvariver should be done as per the direction provided by the Irrigation Dept. A detailed map of the route of diversion should be submitted.
ii. The approval of pre-diversion of the Vidharva river be submitted.
iii. Topo sheet be furnished alongwith the details of hydrolog and ground water data be furnished
iv. Responses to the views of the NGO be submitted.
v. Secondary data be submitted which are available with the Ground Water Board and the State Dept. of Water Resources.
vi. The presence or absence of kampti formation and the aquifer condition should be provided to the Committee.

73.8 Chendipeda-Chendipeda-II OCP (Phase-I) (40 MTPA) in an ML area of 2848.10 ha which includes an area of 106.10 ha for a pit head coal washery (40 MTPA), railway loop and corridor of M/s UCM Coal Company Ltd., Tehsil Chendipeda, dist. Angul, Orissa - (Extension of validity of TOR issued on 31.05.2011)

73.8.1 The proposal is for extension of validity of TOR to Chendipeda-Chendipeda-II OCP (Phase-I) (40 MTPA) in an ML area of 2848.10 ha which includes an area of 106.10 ha for a pit head coal washery (40 MTPA), railway loop and corridor of M/s UCM Coal Company Ltd., Tehsil Chendipeda, dist. Angul, Orissa.

73.8.2 The proponent made the presentation and informed that:

i. MoEF has granted TOR on 31.05.2011 for an integrated project, namely, Opencast coal mine and Pit Head Coal washery of 40 MTPA each.
ii. The baseline Environmental quality data for EIA study was generated covering pre-monsoon season 2011.
iii. Administrative approval to commence land acquisition process is still awaited from the Steel & Mines Department, Govt. of Odisha. Follow up meetings were held with the Chief Minister (Odisha), Chief Secretary, Principal Secretary (Steel & Mines) and CMD (IDCO). Principal Secretary, Department of Energy, Govt. of Uttar Pradesh has requested Principal Secretary (Steel & Mines, GoO), on 20th Feb 2013 to expedite approval. Without prior Administrative approval, notification u/s 4(1) cannot be issued.
iv. Socio-economic survey / R&R survey can be initiated after the receipt of the notification under 4(1). The EIA report is incomplete without these inputs and as such cannot approach the Odisha State Pollution Control Board for conducting Public Hearing.
v. The EIA/EMP report under preparation and the public hearing will be held subsequently.
vi. TOR validity is for 2 years up to 31st May 2013 as per General point no. viii of TOR letter.

73.8.3 The Committee took note of the submissions made by the proponent and **recommended** for granting the extension of validity of the ToR by one year i.e. upto May, 2014.

73.9 Andal East underground Coalmines project (2 MTPA in an ML area of 1266 ha) of M/s Andal East Coal Company Pvt.Ltd .Located in Raniganj coalfields, Andal, West Bengal – TOR.

73.9.1 The proposal is underground mining for Andal East underground Coalmines project for a production of 2 MTPA in an ML area of 1266 ha of M/s Andal East Coal Company Pvt.Ltd .located in Raniganj coalfields, Andal, West Bengal.

i. This is a new proposal for award of TOR. The proposed mine is a underground mine.It is Joint Venture project of M/s Jai Balaji Industries Limited, M/s Rashmi

Cement Limited and M/s Bhushan Steel Limited. The block is surrounded by a number of Coal Blocks viz. Moira South in the north,Andal Central and Madanpur block in the west, Tamla (South) Block in the east and Damodar River in the south.

ii. The Pre-mining land usage would be of 1266 Ha; Post- Mining : 130 Haand the core area would be 1266 ha

iii. The land usage of the project will be as follows:

Type of land use	in Ha
Agriculture	232.9
Reservoir	49
Danga	149
Forest	nil
Settlement	272.20
Railway	290
DVc	204
vested	68.9
Total	**= 1266 hectare**

iv. There is no forest land involved.

v. The total geological reserve is 506 MT. The mineable reserve is 356 MT, extractable reserve is 235 MT. The per cent of extraction would be 65%.

vi. The coal grades are C to E. The average gradient is 6°-10° (gradient 1 in 9 to 1 in 5).

vii. There will be total 29 seams. The thickness of seams for U/G is 9.67 m. The maximum thickness of seams ranges between 1.96 m-4.22 m.

viii. Damoder river flows beyond the south side of Andal East Coal Block. No mining has been planned within 60 m of the river.

ix. The total water requirement is 400 m^3/d range of ground water level. The pre-monsoon ground water level is 4.7 m bgl, post monsoon level is 3.2 m bgl. The make-up water requirement will be 1425 m^3/day.

x. The mining will be by underground method with two sets of mines, developed on both sides of the Andal Rly.yard. . Caving method of the mining (depillaring) is not possible in this area hence stowing, shall be adopted. Mine working will be upto a depth of 300m.

xi. The mining will be by mechanised Bord and Pillar by deploying LHDs and SDLs with solid blasting method. Alternatively, continuous miner with shuttle cars. The targeted production of 2 MTPA will be achieved from 5^{th} year. The solid waste/stones produced from the incline drivages & shaft sinking shall be used in making raised grounds for pit top layouts

xii. The life of the mine is 95 years

xiii. Transportation of coal in pit will be by belt conveyers and chain conveyors; surface to siding will be by road (in truck); siding to loading will be by mechanised loading onto railway wagons.

xiv. No R&R is involved.

xv. The total capital cost of the project is Rs.622.7 Crores. The cost of production would be Rs. 1135/Tone. The CSR cost is Rs. 62.27 crore. Environmental Management Cost is Rs 15 Crore.

xvi. The Mining Plan has been submitted to MOC for approval which is awaited.The Board's approval is also awaited.

xvii. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xviii. **Forestry issues:** No forest land is involved in the Andal east Coal Block for mining.

xix. **Legal issues:** There are no court cases/ violation pending with the project proponent.

73.9.2 The proponent has presented the action taken on the issues raised by the MoEF vide its letter dated 30.04.2012.

i. The DVC did not give their consent. The NHAI vide letter no. 15017/1/2008/PIU(DUP)/224 dated 29.04.2013 has conveyed that they have expansion programme and the road shall be widened to 8-lane and therefore has not granted the consent. The proponent is of the view that even after expansion, it is not going to disturb the 8-lane road as per the Mining Plan submitted to MoC. As per CMR, 1957, a barrier of 45m wide against the road will be left. AECCPL placed an order with CIMFR, Dhanbad to study the impact of seepage, if any. CIMFR will soon submit the report and its outcome shall be included in the EIA/EMP.

ii. The AECCPL has approached the Railway Board, Dhanbad who intimated that the Railway Board cannot entertain any requests from Private Parties and requests may be made through DGMS, Dhanbad. DGMS, Dhanbad can assess the case on approval of Mining Plan and when actual mining is commenced. Hence, this will take some time. The underground rights shall be vested with AECCPL after the approval of Mining Plan & grant of lease by State Govt. Surface rights within DVC area shall vest with DVC hence there is no confusion as far as ownership issue is concerned

73.9.3 The Committee after detailed deliberations has recommended for the extension of the validity of the ToR with the following additional ToRs:

i. There should be no transportation of coal by road.
ii. The proponent should look for transporting coal under railway and to have only one siding.

73.10 Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand - EC based on TOR granted on 30.11.2011

73.10.1 The proposal is for expansion of Jamadoba Coal washery(from 1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil: Jharia, dist. Dhanbad, Jharkhand.
73.10.2 The proponent made the presentation and informed that:

i. It is an expansion proposal for which Ministry has issued the TOR dated 30.11.2011.It has been operational for last 60 years. Jamadoba coal washery receives coal from captive mines of Tata Steel & BCCL mines to beneficiate it in order to produce clean coal required for Tata Steel plant from Jharia division.
ii. It is a fully mechanized washery.
iii. The company is in the process of expansion of production capacity of its mines to meet the coal demand at Jamshedpur. The demand for clean coal after expansion of the integrated steel plant at Jamshedpur (from 6.8 MTPA to 10 MTPA) has been estimated to be 7.30 MTPA.
iv. The raw coal (30-32%) is fed to the washery to produce clean coal with 15-18% ash as per customer requirement and rejects with 48 -50% ash and tailings with 38-42% ash. The process is based on cyclone separation for coarser particles and teetered bed separator and froth flotation for fine particles.
v. The Clean coal is sent to Jamshedpur works. The rejects are consumed in Power Plant and the tailings are disposed of to end user (viz. institutionalized customers including power plant, cement and brick kiln manufacturers).
vi. Details of land usage are as under:

Sl No	Type of Land	Pre-mining	Post-mining	Core area
		Area (Ha.)		
1	Main Plant	0.144	0	-
2	Office	0.0705	0	-
3	Infrastructure	0.806	0	-

4	Water Reservoir	0.25	0	-
5	Road	0.75	0	-
6	Effluent recycling system	1.90	0	-
7	Tailing slurry management	3.00	0	-
	Total	**7 Ha**	**0**	**7 Ha**

vii. Damodar River flows at a distance of 2.5 KM from the washery

viii. Total estimated water requirement is 1240 m^3/d. Range of ground water level is 78 – 7.98 m below ground level. The source of water is underground mine water. Washery is provided with effluent recycling system so as to take care of effluent generated due to cleaning and any overflow from the plant. The existing tailings management through ponds and subsequent recycling shall be phased out in stages till the mechanical tailing dewatering system is stabilized.

ix. The ambient air quality seasonal data has been documented for December 2011 to February 2012. Some of the data recorded (PM_{10} values) are above limits but overall the results are within prescribed limits.

x. **Compliance :** This washery is an old washery and has been operating since 1952 and therefore the compliance of earlier EC from MoEF Regional Office is not available.

xi. **Cost:** Total capital Cost is Rs. 135 Crore. CSR Cost is Rs. 5 Crore for Jharia Division. Environmental Management cost is Rs 14 crore.

xii. There si no involvement of forest land.

xiii. No R& R is involved.

xiv. The thrust areas for CSR activities in Jharia Division are income generation Programme, Health & Hygiene, empowerment (Including SHG Development, Employability Training etc.), water supply network for surrounding villages & Infrastructure Related Jobs.

xv. The CSR expenditure budget is about Rs. 5 crores. This expenditure will include the expenditure required to comply with the above assurances.

xvi. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xvii. Coal transportation: The underground belt conveyors for coal transportation from captive underground mines to the washery site are already in practice. Transportation of coal to steel plant at Jamshedpur will be through Rail wagons.

xviii. **Afforestation:** Afforestation/ green belt development takes place every year on the open surface within leasehold areas

xix. Violation/ Court Case: There is no court cases/ violation pending with the project proponent.

xx. **Public hearing:** The public hearing was held on 20.09.2012 at Jamboda district in Dhanbad. The issues raised were increase in pollution level due to expansion, impact of washery effluents to the Damodarnadi and Dungri Jore, Maximum Nos. of tree Plantation, Medical facilities for villagers. Emergency facilities at night time, Supply of Water & Power, etc.

73.10.3 The Committee after detailed deliberations has made the following observations:

i. The Committee noted that there are discrepancy in the information in the checklist and desired it be suitably revised and submitted with accurate information.

ii. Though the project is for expansion from 1 MTPA to 2 MTPA, it appeared, that the project is not for upgradation of existing 1 MTPA washery to 2 MTPA washery but construction of a new 2 MTPA washery in the same premises. The proponent has informed that after the new washery is constructed, the existing washery will be dismantled retaining/upgrading some common facilities

iii. Although the washery is 60 yrs old, there appears to be no green belt around the facility.

iv. It appears from the public hearing that flyash is polluting the area and no sufficient mitigative measures appear to have been taken.

v. During the discussion, the proponent informed that the fly ash is also being dumped into the low lying area which could be wetland/water body. There have been complains about spillage of flyash during transportation of flyash.

vi. The Committee expressed dissatisfaction with the level of preparation of both the project proponents and the consultant and desired that the proposal will be reconsidered after receipt of the detailed information.

73.10.4. The Committee decided that the proponent should submit the desired information for further consideration by the Committee.

73.11 Expansion of 6 & 7 Pits colliery (from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, tehsil Jharia, dist. Dhanbad, Jharkhand - EC based on TOR granted on 09.02.2011

73.11.1 The proposal is for expansion of 6 & 7 Pits colliery (from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, Dist. Dhanbad, Jharkhand - EC based on TOR granted on 09.02.2012.

73.11.2 The proponent made the presentation and informed that:

i. It is an expansion of 6 & 7 Pits colliery (from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha). The expansion is 114 &%. 6&7 Pits Colliery sends its raw coal to Jamadoba coal washery to produce clean coal.

ii. The Ministry issued the TOR, vide letter no J-11015/373/2010-IA.II(M) dated 09-02-2011.

iii. The project is in the process of expansion of production capacity of its mines to meet the coal demand at Jamshedpur. The demand for steel-grade coal after expansion of the integrated steel plant at Jamshedpur (from 6.8 MTPA to 10 MTPA) has been estimated to be 7.30 MTPA. Therefore, it is imperative to expand the capacity of the mines to enhance the coal dispatch to Tata Steel plant to meet the increased demand.

iv. The land usage of the project will be as follows:

Sl No	**Type of Land**	**Pre-mining**	**Post-mining**	**Core area**
		Area (Ha.)		
1	Land under office building	10.03	0	-
2	Land under bunglow, colony, etc.	19.79	0	-
3	Land under village	32.46	32.46	-
4	Area for plantation and park	10.29	10.29	-
5	Land used for playground and storage of waste disposal of colony and bastee	10.69	10.69	-
6	Land under rail and road network	40.80	40.80	-
7	Land under agriculture	42.06	42.06	-
8	Land under JSEB substation and coal board bunker	2.00	2.00	
	Total	**168.12**	**138.3**	**168.12**

v. The total geological reserve is 34.05 MT. The mineable reserve is 28.05 MT, extractable reserve is 11.09 MT. The per cent of extraction would be 30 % for overall seam and 80% within the panel. The coal grades are W-II to W-IV. Average Gradient is 1 in 7 (8^0 8'). There will be total five seams. The thickness of seams ranges between 2.94 m to 7.31 m. Maximum thickness of seams 7.31 m.

vi. Damodar River flows at a distance of 3000mtrs from lease boundary,There is no diversion of river/streams or natural drain.

vii. The total water requirement is 11456 KL/Day (7637 KL/Day to be used for stowing purpose which is recycled and sent back to underground) ground water level ranges between 2.78 – 7.98 m bgl.

viii. The method of mining will be by semi-mechanized underground Board & Pillar system using SDLs (Side Discharge Loaders) and LHDs (Load Haul Dumpers). Introduction of new technologies like Continuous Miner will allow the capacity of the project to be enhanced.

ix. There would be no OB dumps.

x. The seasonal data for ambient air quality has been documented for the one season April'11 to June'11. Some of the data recorded (PM_{10} values) are above limits but overall the results are within prescribed limits.

xi. Life of the mine is 26 years.

xii. This is underground mine. Therefore no void is envisaged.

xiii. **Transportation:** Coal transportation to washery is done through a network of underground belt conveyor system and hence there is no surface transportation of coal. Transport of man from surface to underground will be via shaft. The material transport is done through the shaft and by means of haulage in the underground.

xiv. **Compliance :** Compliance of earlier EC from MoEF Regional Office is required to be submitted.

xv. **Cost:** The total capital cost is Rs. 21.00 Crore. This cost is included in the final cost of production of steel. CSR Cost is Rs. 5 Crore for Jharia Division. Environmental Management cost is Rs 85 Lakhs.

Approval of mine plan has been obtained, vide 30411/(20)/2009-CPAM dated 08.03.2010. Mine closure approval is under progress. Progressive MCP has been approved.

xvi. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xvii. There si no involvement of forest land.

xviii. There will be no displacement of the population will be required in the proposed project and therefore no R&R Policy is required. The mine is an old working mine.

xix. CSR activity: The thrust areas for CSR activities in Jharia Division are **i**ncome Generation Programme (Including Agriculture Extension), Health & Hygiene, Empowerment (Including SHG Development, Employability Training etc.), water supply network for surrounding villages & Infrastructure Related Jobs.

xx. The CSR expenditure budget for FY14 is about Rs. 5 crores. This expenditure will include the expenditure required to comply with the above assurances.

xxi. The afforestation/ green belt development takes place every year on the open surface within leasehold areas.

xxii. Violation/ Court Case: There is no court cases/ violation pending with the project proponent.

xxiii. **Public hearing:** The public hearing was held on 22.09.2012 at Dhanbad. The issues raised in the viz. cracks in houses due to blasting; transportation of raw coal to washery; sand spillage and roads getting damaged during sand transport. pollution to be minimized; scope of mine fires in mines; lowering of water table due to increasing depth of underground mines, water sprinkling in all the nearby roads; dust pollution near hospital due to rampant truck transportation; pollution due to nearby ash dumps; water from washery reaches our ponds and pollutes it; threat of subsidence due to underground mining; water-logging issues in monsoons near magazine area; spillage of ash from trucks etc.

73.11.3 The Committee after detailed deliberations has made the following observations:

i. There have been complaints during the Public Hearing about the decline of water table of the area. Since the UG mining is extending from 450 to 650 mt, there will be substantial adverse impact on the ground water system in the area and it will disrupt the confined aquifer.

ii. The PP should provide detailed hydrology of the area and the likely impacts on the water table in the area. The watershed map and sources of drinking water (including details of hand pumps) should be obtained from the local geologist of the State Government. It must be seen whether the water tables have gone down and whether the same have impacted the quality of drinking water.

iii. The information provided by the PP clearly indicates that about 31% have health disorders (e.g. gastroenteritis) among the community workers suggested the contamination of drinking water. Incidences of respiratory disorders have also been reported very high (about 20 %). The Committee decided that the root cause of such high incidence be identified and an action plan for preventive health programmes be submitted.

iv. The proposals should be well formulated and commitment of the proponent should be be clearly reflected in the document submitted to the Committee/ MoEF. In fact, the Committee was appalled at the callous and perfuncatory manner in which oral responses were given by the proponent and consultant to the various queries raised by the Members.

v. Even though coal mining activities in this area has been going on over six decades, the local population do not appear to have reaped much benefit. This needs to be corrected.

vi. During the PH, the issue of spillage of fly ash, pollution due to ash dumps and sand spillage during transportation have been raised. Suitable mitigative measures in this regard need to betaken

73.11.4 The Committee decided that the proponent should submit the desired information for further consideration by the Committee.

73.12 Dalla Coal Beneficiation Plant of (1.0 MTPA in an ML area of 2.1781 ha) of M/s Jaiprakash Associates Ltd ., Village Kota, Distt. Sonebhadra, Uttar Pradesh - TOR.

73.12.1 The proposal is for TOR for the Dalla Coal Beneficiation Plant of (1.0 MTPA in an ML area of 2.1781 ha). The project is within the premises of existing Dalla Cement Factory of M/s Jaiprakash Associates Ltd ., Village Kota, Distt. Sonebhadra, Uttar Pradesh.

73.12.2The proponent made the presentation and informed that:

i. The proponent proposes to set up a Coal beneficiation Plant at Village-Kota, Tehsil-Robertsganj, District–Sonebhadra in Uttar Pradesh of 1.0 MTPA capacity by adopting Heavy Media Cyclone Technology**.**

ii. Coal beneficiation Plant is proposed in the existing premises of Dalla Cement Factory (DCF). DCF comprises of an integrated Cement Plant having two Clinkerisation plants, Cement grinding unit, Limestone mines and Captive power plant. The Environmental Clearance for this integrated project was granted by MoEF vide Ref No.J11011/560/2007-IA.II (I) dated 29th September, 2008.

iii. Dalla Cement Factory was initially set up in year 1971 as one of the three plants at Churk, Dalla and Chunar by UP State Cement Corporation Ltd. JAL had acquired the assets of the UPSCL, under liquidation, through competitive bidding process and under orders of Hon'ble High Court at Allahabad UP. Old Clinker manufacturing unit, refurbished, revived and commissioned on 28th March 2008. New Integrated Cement Plant, including CPP is in operation since 27th March 2009. The third Cement Plant, "Jaypee Super" is under implementation after obtaining the Environmental Clearance.

iv. Total land of Dalla Cement Factory is 67 ha. Existing Green belt is 25 ha (more than 33%). Vacant space available within premises is 7.0 ha. The land requirement for coal beneficiation unit is 2. 178 ha. (already in possession)

v. Son & Rihand Rivers flows at a distance of 2 .7 Km (NE) & 6.7 km (W) respectively.

vi. The total water requirement is 275 m^3/day. Water allocation for 6000 m3/day from radial bore well at Son river already obtained. No additional water allocation required

vii. Power requirement will be 1.5 MVA which will be sourced from existing CPP/Grid Power.

viii. All storages for incoming coal, washed coal and washery rejects will be stored in covered sheds. Rejects will be used in Captive Power Plant. Washery will be installed in the closed building and washery process is the wet process in the closed enclosures.

ix. **Transportation of coal:** Raw coal will be transported by covered conveyer having water spraying system. Transport of ROM coal from NCL by Railway / Road

x. Cost : Total capital cost of the project is Rs.30 Crore.
xi. Approvals:6000 m^3 /day from radial bore well (Son River)has been sanctioned by Ground water board Mirzapur obtained on 19.7.2007.Wildlife issues: Kaimur Wild life sanctuary is located at a distance of 3.5 km. from the project site.
xii. There are no court cases/ violation pending with the project proponent.

73.12.3 The Committee after detailed deliberations has made the following observations:

i. The coal washery is located within the premises of the cement plant of the company. The site of the cement plant and washery and the coal based TPP is located at a distance of 3.5 km from the boundary of the Kaimur wild life sanctuary. The distance will be further reduced to 2.5 km when 1 km of extended ecological sensitive zone is notified. Therefore, the project should be cleared by the Standing Committee for the National Board for Wild Life, as per the circulars of the MoEF.
ii. Details of the quantity and quality of clean coal and the rejects to be furnished alongwith the suitability of the rejects in the existing coal fired boiler of 27 MW.
iii. Improving of recovery of fines from the slurry for increasing the clean coal production in the washery be made.

73.12.4 The Committee has recommended for the ToR.

73.13 Urtan North Underground Coal Mine Project (0.6 MTPA in 475 ha) and Coal Washery (0.6 MTPA) of M/s Urtan North Mining Company Limited, District Anuppur, Madhya Pradesh - EC based on TOR granted on 11.01.2012.

73.13.1 The project is for Urtan north underground coal mine project (0.6 MTPA in 475 ha) and coal washery (0.6 MTPA) of M/s Urtan North Mining Company Limited District Anuppur, Madhya Pradesh. It is a Joint venture between Jindal Steel & Power Ltd & Monet Ispat& Energy Ltd.

73.13.1 The proponent made the presentation and informed that:

i. It is a new underground mining project with a peak production of (0.6 MTPA in 475 ha) and Coal Washery (0.6 MTPA) in district Anuppur, Madhya Pradesh. The Ministry issued the TOR vide letter no J-11015/244/2011-IA-II (M) dated 11th January, 2012. Area of 8.8 ha washery is a part of 475 Ha ML area.

ii. The land usage of the project will be as follows:

Pre-mining:

Village Name	Private Land	Govt. Land & Non Forest		Total
		Gochar Land	Other Revenue Land (Road/ Pond/ Nala etc.)	
Muhari	89.8475	0.000	7.763	97.6105
Baskhala	138.3851	1.858	8.8202	149.0633
Thodha	197.3638	1.3666	9.4138	208.1442
Baskhali	18.025	2.157	0.000	20.182
Total	**443.6214**	**5.3816**	**25.997**	**475**

Post Mining & Core mining:

Sl. No.	Description of area	Total Land use (ha.)
1	Facilities including CHP, main office, substation, ETP incline 1 & 2, V.T centre, parking, Diesel filling stn, Lamp room, Attendance room, pit office, lawns etc	4.21

Sl. No.	Description of area	Total Land use (ha.)
2	Incline No. 1 & 2 mouth (2x2500M²)	0.5
3	Settling pond	0.5
4	Coal stack yard	1
5	Essential quarters (small colony)	1
6	Waste dump	1.5
7	Explosive Magazine	0.2
8	Green belt	4.32
9	Road near dump	0.23
10	Approach road to Shaft and Transport up to Magazine	0.75
11	Washery area	8.77
	Sub Total *Disturbed (including green belt and lawn plantation)	**22.98**
12	Undisturbed area	**452.02**
	Total	**475**

iii. The total geological reserve is 69.823 MT. The mineable reserve is 49.930 MT, extractable reserve is 25.721.The percent of extraction would be 51.51 %.

iv. The coal grades are W – I to W – IV and E to F.

v. The average Gradient Eastern part (2° - 4°) to steep in south western part (9°-12°).

vi. There will be total six seams. The thickness of seams ranges between 0.2 to 7.85.

vii. The ML area forms a part of Kewai river watershed which is an important tributary to Son river. Seasonal nalas cut across the lease hold and drain the storm water into river Kewai. The streamlets are of 1st and second order originating from NW side of the mine, contributing toKewai River. Various water bodies present in the study area are Chaudar nala, Kewai River, Konai Nala, Latura Nala, Thoma Nala, Bichli Nala, Hendri Nala, Gohirari Nala and Gahiredhar nala.

viii. The total water requirement is 550 cum/day (265 cum/day for drinking and 285 cum / day industrial water). The range of ground water level in mine lease: 3.4 m to 12.5 m, (Pre Monsoon) and 1.0 to 2.2 mm (Post Monsoon) in Study Area: 2.00 m to 12.7 m (Pre Monsoon) and 0.20 m to 8.0 m (Post Monsoon)

ix. The method of mining would be mechanised and semi-mechanised bord and pillar underground mining by continuous miner with shuttle cars as well as LHDs and SDLs with solid blasting method. The depth of working will be below 282 m up to 454 m.

x. There is one external OB Dump covering an area of 1.50 Ha. The height of the dump would be 10 m with the total quantity of 1 mm^3. There are no internal OB Dumps

xi. The seasonal data for ambient air quality has been documented for one season (December 2011- February 2012) and all results at all stations are within prescribed limits.

xii. The life of the mine is 46 years.

xiii. **Transportation:** the transportation of coal in pit will be by conveyors, surface to siding by Dumpers, .The coal will be transported by 20T coal tippers up to nearest railway siding at Harad (20 km, SW) for further transport by Railways. The middling will be sent to the power plant at Raigarh.

xiv. **Subsidence**: A three dimensional numerical modelling for subsidence has been carried out by Department of Mining Engineering, Institute of Technology, Banaras Hindu University, Varanasi which concluded that the cracks are not likely to be formed on the surface due to subsidence. For subsidence management, sufficient safety pillars will be left below houses/ village and below ponds/ water bodies.

xv. There will be no involvement of R&R and there will be zero displacement of households before commencing mining. As per initial study, 24 families will be

affected land oustees who will be given rehabilitation benefits according to the Policies of the Govt. of Madhya Pradesh and prevailing practice in industries in the vicinity.

xvi. Corporate Social Responsibility : Action plan and budgetary allocation for CSR activities from start of project was presented with a total outlay of capital cost- Rs. 395 lakhs and the recurring cost of Rs. 35.75 lakhs

xvii. Cost : Total capital cost of the project is Rs. 250 Crore. The cost of production would be Rs. 1073/Tone. Environmental Management Cost (Capital cost is Rs. 222.72 lakhs; Recurring is Rs. 106.76 lakhs per year

xviii. **Approvals:** Application for abstraction of ground water has been submitted to CGWA vide letter no. UN/EMP-HG/2012-13/16 dated 25.09.2012.

xix. Mining plan has been submitted for approval vide letter no. UN/MP & MCP/2012-13/29 dated 27.02.2013. The Board's approval for Mining Plan has been obtained on 18/05/2012. The Mine Closure Approval s awaited

xx. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xxi. **Forestry issues:** No forest area involved in the study area.

xxii. Total Afforestation plan shall be implemented covering an area of20.74 ha at the end of mining where reclaimed external OB Dump 1.50ha. The green Belt will be made over 1.63. The density of tree plantation will be 2500 trees/ ha of plants.

xxiii. There are no court cases/ violation pending with the project proponent.

xxiv. **Public hearing:** The public hearing was held on 12.01.2013 at Baskhala, Tehsil Kotma, Dist. Anuppur of Madhya Pradesh. The issues raised were regarding provision of water for employees in the residential area and employment, provision for employment to the local people, training to unskilled people, provision of school, provision of water for animals, compensation, etc.

73.13.3 The EAC has received a letter from an NGO sending its views on the proposal, which include that the Cumulative Impact of the project area has not been assessed. There will be high impact on ground and surface water. The Kewai River (tributary of the Son) flows within 3 km from eastern boundary of the project area. Chauder nala flows just 0.2 km from the project site. Due to the underground mining in this area, possible contamination of groundwater and surface water will be a very serious issue. Aquifer subsidence and contamination of ground water due to explosives use could be other factors. The project proponent should justify the need of the project and provide information as 'overall justification for implementation of the project' in the summary of the EIA Report also. The end use not defined properly, long distance transportation, coal not suitable for the proposed use, increased pollutions due to transportation of coal.

73.13.4 The proponent has responded to these views which include the following:

i. The proponent has responded to the views raised above at para 73.13.3.
ii. The PP should provide additional details on the water shed of Kewai river basin and the rate of recharge of the ground water system and cumulative impact of mining on water table of both confined and unconfined aquifer system.
iii. Since the mine water is pumped out and to enhance the rate of recharge of the ground water the Committee suggested to the PP to prepare a conservation action plan for enriching the neighbouring forest are in collaboration with the forest deptt. One time corpus grant of Rs. 50 lakhs should be earmarked, as agreed.
iv. The Committee desired that the PP need to submit the details of the resources according to UNFC pattern and define the minable resources.
v. Keeping in view the coal conservation and to optimise the percentage of extraction from underground mining extraction, the PP should examine the method of extraction.
vi. As the life of the mine is 46 yrs, the Railway siding is required to be brought to the mine. It was noted that the Railway track passes at a distance of approx. 3.9 km from the mine.

vii. The road transport to the siding, which is about at 20 km away, is achieved with mechanically covered trucks and this method of transport is allowed for a period not more than five years or the railway siding to the mining site whichever is earlier.
viii. It was noted that the mining plan and mine closure plan have not yet been approved.
ix. The proponent need to furnish the proximate and total analysis of coal.
x. The Committee suggested for examining technology for fines recovery from the slurry to increase the clean coal production.
xi. The use of mine waste and rejects from the washery need to be examined.
xii. The rejects from the washery should not be dumped into the low lying areas.
xiii. At no stage, the surface drainage pattern should be altered.
xiv. The quality of ground and surface waters should be re-examined as the values presented appear to be erroneous.
xv. The proponent will only use the clean coal for the steel making at Raigarh by both the Parties (Jindal and Monnet). The change of end use plan, as per the coal block allotment which was for sponge iron plant at Raigarh, Pttratu and Angul to Steel Plant at Raigarh only. This has been proposed by the proponent to the MoC which is agreed to by the MoC.
xvi. Whereas the total annual recurring cost of Rs. 35.75 lakhs is to be increased as per the annual inflation rates. Every year thereafter, in the capital cost at items F (capacity building,) and item G (vulnerable...) a sum of Rs 30 lakhs each should be earmarked as a corpus fund as has been agreed by the PP.

The meeting ended with a vote of Thanks to the Chair.

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ANNEXURE-1

PARTICIPANTS IN 73rd EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 6th – 7th May, 2013 ON COAL SECTOR PROJECTS.

LIST OF PARTICIPANTS Expert Appraisal Committee (Coal Mining) :		
1.	Shri V.P. Raja	Chairman
2.	Prof. C.R. Babu	Vice Chairman
3.	Dr. T K Dhar	Member
4.	Shri J.L. Mehta	Member
5.	Prof. G. S. Roonwal	Member
6.	Dr. Shiv Attri	Member
7.	Dr. Manoranjan Hota	Director & Member Secretary
8.	Mr. P. R. Sakhare	Deputy Director
Special Invitee :		
10.	Dr. R K Garg, Adviser, Coal India Limited	

Annexure-2

PARTICIPANTS IN 73rd EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 6th -7th May, 2013 ON COAL SECTOR PROJECTS.

73.1 M/s Bharat Coking Coal Limited,

1. Shri D.C. Jha
2. Dr. E V R Raju (Env.)
3. Sh. Amrit Roy
4. Sh. Jatin Mangla
5. Sh. S.Panja
6. Sh. Aftab Alam

73.2 M/s Chhatisgarh Mineral Development Corporation Limited.

1. Sh. B.K.Sinha
2. Prof. P. K. Shrivastava
3. Shri P. S. Yadav
4. Sh. P. K. Dhuican
5. Sh. I. P. Kanan
6. Ms. Manisha Sharma

73.3 M/s Mahanadi Coalfields Ltd

No participants attended

73.4 M/sSouth Eaten Coalfields Ltd., ECL

1. Sh. U.T.Kanzarkar
2. Sh. S.R.Tripathi
3. Sh. A.K.Gupta
4. Sh. S.C.Shankar

73.5 M/s Mahavir's Coal Washeries.

1. Sh.V.K.Jain
2. Sh. D. S.Rajant
3. Sh.Y. P.Ohri
4. Sh. K. K.Jain
5. Sh M. Janardhan

73.7 M/s Parsoda Open Caste by M/s Western Coalfield Ltd.

1. Sh. S. K. Jaynamic
2. Sh Anand Azami
3. Sh. R.M. Wanare
4. Sh. Vaibhyav Patuar
5. Dr. Debrata Das
6. Sh. Kaushik Chakraborty

73.8 M/s UCM Coal Company Limited

1. Sh. P.S.Yadav
2. Sh. R. Mattu
3. Sh. Mukesh Chandra
4. Sh. Alok Kumar
5. Sh. VikramVyas
6. Sh. Uma Shankar
7. Sh. Harsh Niwas
8. Sh. Man Mohan Bisht
9. Sh. H.K.Agarwal
10. Sh. H.K.Jain

73.9 M/s Andal East Coal Company Pvt. Limited

1. Sh. J.S.Prasad
2. Sh. Kapil Dhagat
3. Sh. M.K.Choudhary

73.10 M/s Tata Steel Limited

1. Dr.M. K. Gupta
2. Dr. M. Ahmad
3. ShriGopal Prasad
4. Sh. Chanakya Chowdhury
5. Sh.Manish Mishra
6. Sh.Mukesh Prasad
7. Dr.B.K.Tewang

73.11 M/s Urtan North Mining company Limited

1. Dr. I. N. Rao
2. Sh. G. P.Chowdhury
3. Sh. N. K.Prasad
4. Dr. J. K.Soni
5. Sh. N.C.Bayali
6. Ms. Manisha Sharma
7. Sh. B.D. Sharma
8. Mr. B.N. Chursia

73.12 M/s Jai Prakash Associate Limited

1. Sh. V. S.Bajaj
2. Sh. M. N.Jha
3. Sh. Goel
4. Ms Kanta
5. Mr. Ashok Nair
6. Sh. C.Shyam Sunder
7. Shri G.V.L.Rao

ANNEXURE-3

GENERIC TOR FOR COAL WASHERY

Based on the presentation made and discussions held, the Committee prescribed the following TOR:

(i) A brief description of the plant, the technology used, the source of coal, the mode of transport of incoming unwashed coal and the outgoing washed coal. Specific pollution control and mitigative measures for the entire process.

(ii) The EIA-EMP report should cover the impacts and management plan for the project of the capacity for EC is sought and the impacts of specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts for the rated capacity. If the washery is captive to a coal mine/TPP/Plant the cumulative impacts on the environment and usage of water should be brought out along with the EMP.

(iii) A Study area map of the core zone and 10km area of the buffer showing major industries/mines and other polluting sources, which shall also indicate the migratory corridors of fauna, if any and the areas where endangered fauna and plants of medicinal and economic importance are found in the area. If there are any ecologically sensitive areas found within the 15km buffer zone, the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc should be shown and the comments of the Chief Wildlife Warden of the State Government should be furnished.

(iv) Collection of one-season (non-monsoon) primary base-line data on environmental quality ?air (PM_{10}, $PM_{2.5}$, SOx and NOx), noise, water (surface and groundwater), soil.

(iv) Detailed water balance should be provided. The break-up of water requirement as per different activities in the mining operations vis-à-vis washery should be given separately. Source of water for use in mine, sanction of the competent authority in the State Govt..and examine if the unit can be zero discharge including recycling and reuse of the wastewater for other uses such as green belt, etc.

(vi) Impact of choice of the selected use of technology and impact on air quality and waste generation (emissions and effluents).

(vii) Impacts of mineral transportation - the entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, if any, and their impacts on air quality should be shown in a flow chart with the specific points where fugitive emissions can arise and the specific pollution control/mitigative measures proposed to be put in place.

(viii) Details of various facilities to be provided for the personnel involved in mineral transportation in terms of parking, rest areas, canteen, and effluents/pollution load from these activities. Examine whether existing roads are adequate to take care of the additional load of mineral [and rejects] transportation, their impacts. Details of workshop, if any, and treatment of workshop effluents.

(ix) Impacts of CHP, if any on air and water quality. A flow chart of water use and whether the unit can be made a zero-discharge unit.

(x) Details of green belt development.

(xi) Including cost of EMP (capital and recurring) in the project cost.

(xiv) Public Hearing details of the coal washery to include details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xv) Status of any litigations/ court cases filed/pending on the project.

(xvi) Submission of sample test analysis of:

i. Characteristics of coal to be washed- this includes grade of coal and other characteristics ?ash, S and and heavy metals including levels of Hg, As, Pb, Cr etc.
ii. Characteristics and quantum of washed coal.
iii. Characteristics and quantum of coal waste rejects.

(xvii) Management/disposal/Use of coal waste rejects

(xviii) Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC has been sought.

(xxxvi) Submission of sample test analysis of:
Characteristics of coal to be washed- this includes grade of coal and other characteristics, ash, S

(xxxviii) Corporate Environment Responsibility:

a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

ANNEXURE -4

GENERIC TOR FOR AN OPENCAST COALMINE PROJECT

(i) An EIA-EMP Report would be prepared for **??.. MTPA** rated capacity in an ML/project area of ??ha based on the generic structure specified in Appendix III of the EIA Notification 2006.

(ii) An EIA-EMP Report would be prepared for ??. MTPA rated capacity cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modelling for **???. MTPA** of coal production based on approval of project/Mining Plan for ???MTPA. Baseline data collection can be for any season except monsoon.

(iii) A map specifying locations of the State, District and Project location.

(iv) A Study area map of the core zone and 10km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km area of the buffer zone should be given.

(v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use. Satellite imagery per se is not required.

(vi) Map showing the core zone delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.

(vii) A contour map showing the area drainage of the core zone and 2-5 km of the buffer zone (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated as a separate map.

(viii) A detailed Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc.

(ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.

(x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.

(xi) Break up of lease/project area as per different land uses and their stage of acquisition.

LANDUSE DETAILS FOR OPENCAST PROJECT

S.N.	LANDUSE	Within ML Area (ha)	Outside ML Area (ha)	TOTAL
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

(xii) Break-up of lease/project area as per mining operations.

(xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.

(xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (PM_{10}, $PM_{2.5}$, SO_x, $NO_x$and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil along with one-season met data coinciding with the same season for AAQ collection period.

(xv) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Values should be provided based on desirable limits.

(xvi) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I fauna, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a comprehensive Conservation Plan should be prepared and submitted with EIA-EMP Report and comments from the CWLW of the State Govt. also obtained and furnished.

(xvii) Details of mineral reserves, geological status of the study are and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures.

(xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.

(xix) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.

(xx) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.

(xxi) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.

(xxii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long?termmodelling studies on. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there us a declining trend of groundwater availability and/or if the area falls within dark/grey zone.

(xxiii) Impact of blasting, noise and vibrations.

(xxiv) Impacts of mining on the AAQ, predictive modelling using the ISCST-3 (Revised) or latest model.

(xxv) Impacts of mineral transportation ?within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.

(xxvi) Details of waste generation ?OB, topsoil ? as per the approved calendar programme, and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use. OBdump heights and terracing should based on slope stability studies with a max of 28^{o} angle as the ultimate slope. Sections of dumps (ultimate) (both longitudinal and cross section) with relation to the adjacent area should be shown.

(xxvii) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF) and selection of species (local) for the afforestation/plantation programme based on original survey/landuse.

Table 1: Stage-wise Landuse and Reclamation Area (ha)

S.N.	**Land use Category**	**Present (1st Year)**	**5th Year**	**10th Year**	**20th year**	**24th Year (end of Mine life)***
1.	Backfilled Area(Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					

8.	Area around buildings and Infrastructure					
	TOTAL	110*	110*	110*	110*	110*

* As a representative example

Table 2: Stage-wise Cumulative Plantation

S.N.	**YEAR***	**Green Belt**		**External Dump**		**Backfilled Area**		**Others (Undisturbed Area/etc)**		**TOTAL**	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	1st year										
2.	3rd year										
3.	5th year										
4.	10th year										
5.	15th year										
6.	20th year										
7.	25th year										
8.	30th year										
9.	34th year (end of mine life)										
10.	34-37th Year (Post-mining)									85	

* As a representative example

(xxviii) Conceptual Final Mine Closure Plan, post mining land use and restoration of land/habitat to pre- mining. A Plan for the ecological restoration of the area post mining and for land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of rehandling (wherever applicable) and backfilling and progressive mine closure and reclamation.

Table 3: Post-Mining Landuse Pattern of ML/Project Area (ha)

S.N.	**Land use during Mining**	**Land Use (ha)**				
1.	External OB Dump	Plantation	Water Body	Public Use	Undisturbed	TOTAL
2.	Top soil Dump					
3.	Excavation					

4.	Roads					
4.	Built up area					
5.	Green Belt					
6.	Undisturbed Area					
	TOTAL	85				**110**

(xxix) Flow chart of water balance. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. Details of STP in colony and ETP in mine. Recycling of water to the max. possible extent.

(xxx) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine.

(xxxi) Risk Assessment and Disaster Preparedness and Management Plan.

(xxxii) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.

(xxxiii) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.

(xxxiv) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.

(xxxv) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.

(xxxvi) Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xxxvii) In built mechanism of self-monitoring of compliance of environmental regulations.

(xxxx) Status of any litigations/ court cases filed/pending on the project.

(xxxxi) Submission of sample test analysis of:

Characteristics of coal - this includes grade of coal and other characteristics ?ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.

(xxxxii) Copy of clearances/approvals ? such as Forestry clearances, Mining Plan Approval,

NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

(A) FORESTRY CLEARANCE

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland	Balance area for which FC is yet to be obtained	Status of appl. for diversion of forestland
		If more than one, provide details of each FC			

ANNEXURE -5

GENERIC TOR FOR AN UNDERGROUND COALMINE PROJECT

(i) An EIA-EMP Report should be prepared for a peak capacity of **????.. MTPA** over an area of ????.. ha addressing the impacts of the underground coalmine project including the aspects of mineral transportation and issues of impacts on hydrogeology, plan for conservation of flora/fauna and afforestation/plantation programme based on the generic structure specified in Appendix III of the EIA Notification 2006.. Baseline data collection can be for any season except monsoon.

(ii) The EIA-EMP report should also cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of baseline data and information, generation of baseline data on impacts for ??. MTPA of coal production based on approval of project/Mining Plan.

(iii) A Study area map of the core zone and 10km area of the buffer zone (15 km of the buffer zone in case of ecologically sensitive areas) delineating the major topographical features such as the land use, drainage, locations of habitats, major construction including railways, roads, pipelines, major industries/mines and other polluting sources, which shall also indicate the migratory corridors of fauna, if any and the areas where endangered fauna and plants of medicinal and economic importance are found in the area.

(iv) Map showing the core zone along with 3-5 km of the buffer zone) delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records) and grazing land and wasteland and water bodies.

(v) Contour map at 3m interval along with Site plan of the mine (lease/project area with about 3-5 km of the buffer zone) showing the various surface structures such as buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within/adjacent to the ML), green belt and undisturbed area and if any existing roads, drains/natural water bodies are to be left undisturbed along with details of natural drainage adjoining the lease/project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, etc., highways, passing through the lease/project area.

(vi) Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area. Impacts of project, if any on the landuse, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations. Extent of area under surface rights and under mining rights.

S.N.	ML/Project Land use	Area under Surface Rights (ha)	Area Under Mining Rights (ha)	Area under Both (ha)
1.	Agricultural land			
2.	ForestLand			
3.	Grazing Land			
4.	Settlements			
5.	Others (specify)			

Area Under Surface Rights

S.N.	Details	Area (ha)
1.	Buildings	
2.	Infrastructure	
3.	Roads	
4.	Others (specify)	
	TOTAL	

(vii) Study on the existing flora and fauna in the study area carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. The flora and fauna details should be furnished separately for the core zone and buffer zone. The report and the list should be authenticated by the concerned institution carrying out the study and the names of the species scientific and common names) along with the classification under the Wild Life Protection Act, 1972 should be furnished.

(viii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working plan/scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps should also be included.

(ix) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.

(x) Collection of one-season (non-monsoon) primary baseline data on environmental quality ? air (PM_{10}, $PM_{2.5}$, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, AS, etc), noise, water (surface and groundwater), soil along with one-season met data.

(xi) Map of the study area (core and buffer zone) clearly delineating the location of various monitoring stations (air/water/soil and noise ? each shown separately) superimposed with location of habitats, wind roses, other industries/mines, polluting sources. The number and location of the stations should be selected on the basis of the proposed impacts in the downwind/downstream/groundwater regime. One station should be in the upwind/upstream/non-impact non-polluting area as a control station. Wind roses to determine air pollutant dispersion and impacts thereof shall be determined. Monitoring should be as per CPCB guidelines and standards for air, water, noise notified under Environment Protection Rules. Parameters for water testing for both ground and surface water should be as per ISI standards and CPCB classification of surface water wherever applicable.

(xii) Impact of mining and water abstraction and mine water discharge in mine on the hydrogeology and groundwater regime within the core zone and 10km buffer zone including long?termmodelling studies on the impact of mining on the groundwater regime. Details of rainwater harvesting and measures for recharge of groundwater should be reflected wherever the areas are declared dark/grey from groundwater development.

(xiii) Study on subsidence, measures for mitigation/prevention of subsidence, modelling subsidence prediction and its use during mine operation, safety issues.

(xiv) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users should be provided.

(xv) Impact of choice of mining method, technology, selected use of machinery - and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, Impact of blasting, noise and vibrations.

(xvi) Impacts of mineral transportation ?within and outside the lease/project. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, and their impacts on air quality should be shown in a flow chart with the specific points where fugitive emissions can arise and the specific pollution control/mitigative measures proposed to be put in place. Examine the

adequacy of roads existing in the area and if new roads are proposed, the impact of their construction and use particularly if forestland is used.

(xvii) Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities. Examine whether existing roads are adequate to take care of the additional load of mineral and their impacts.

(xviii) Examine the number and efficiency of mobile/static water sprinkling system along the main mineral transportation road within the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality.

(xix) Impacts of CHP, if any on air and water quality. A flow chart of water use and whether the unit can be made a zero-discharge unit.

(xx) Conceptual Final Mine Closure Plan along with the fund requirement for the detailed activities proposed there under. Impacts of change in land use for mining operations and whether the land can be restored for agricultural use post mining.

Table 1 Stage-wise Cumulative Plantation

S.N.	**YEAR***	**Green Belt**		**External Dump**		**Backfilled Area**		**Others (Undisturbed Area/etc)**		**TOTAL**	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	1st year										
2.	3rd year										
3.	5th year										
4.	10thyesr										
5.	15thyear										
6.	20th year										
7.	25th year										
8.	30th year										
9.	34th year (end of mine life)										
10.	34-37th Year (Post-mining)									85*	2,12,500

*As a representative example

(xxi) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be furnished.

(xxii) Details of cost of EMP (capital and recurring) in the project cost and for final mine closure plan. The specific costs (capital and recurring) of each pollution control/mitigative measures proposed in the project until end of mine life and a statement that this is included in the project cost.

(xxiii) Integrating in the Env. Management Plan with measures for minimising use of natural resources ?water, land, energy, raw materials/mineral, etc.

(xxiv) R&R: Detailed project specific R&R Plan with data on the existing socio-economic status (including tribals, SC/ST) of the population in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and

housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.

(xxv) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.

(xxvi) Public Hearing should cover the details as specified in the EIA Notification 2006, and include notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments by the proponent made should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xxvii) Status of any litigations/ court cases filed/pending in any Court/Tribunal on the project should be furnished.

(xxxvii) Submission of sample test analysis of:

(xxxvii) Characteristics of coal - this includes grade of coal and other characteristics ? ash, and heavy metals including levels of Hg, As, Pb, Cr etc.

(xxxviii) Copy of clearances/approvals ?such as Forestry clearances, Mining Plan Approval, NOC from Flood and Irrigation Dept. (if req.), etc.

(A) FORESTRY CLEARANCE

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland	Balance area for which FC is yet to be obtained	Status of appl. for diversion of forestland
		If more than one, provide details of each FC			

ANNEXURE-6

GENERIC TOR FOR AN OPENCAST-CUM-UNDERGROUND COALMINE PROJECT

(i) An EIA-EMP Report would be prepared for a combined rated capacity of**??..**MTPA for OC-cum-UG project which consists of ??. MTPA for OC and ???. MTPA for UG in an ML/project area of ??ha based on the generic structure specified in Appendix III of the EIA Notification 2006.

(ii) An EIA-EMP Report would be prepared for ??. MTPA rated capacity cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modelling for ???. MTPA of coal production based on approval of project/Mining Plan for ??.. MTPA. Baseline data collection can be for any season except monsoon.

(iii) A map specifying locations of the State, District and Project location.

(iv) A Study area map of the core zone and 10km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km area of the buffer zone should be given.

(v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use. Satellite imagery per se is not required.

(vi) Map showing the core zone delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.

(vii) A contour map showing the area drainage of the core zone and 2-5 km of the buffer zone (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated as a separate map.

(viii) A detailed Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, etc., approach roads, major haul roads, etc.

(ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.

(x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.

(xi) Break up of lease/project area as per different land uses and their stage of acquisition.

LANDUSE DETAILS FOR OPENCAST PROJECT

S.N.	**LANDUSE**	**Within ML Area (ha)**	**Outside ML Area (ha)**	**TOTAL (ha)**
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

LANDUSE DETAILS FOR UNDERGROUND PROJECT

S.N.	ML/Project Land use	Area under Surface Rights (ha)	Area Under Mining Rights (ha)	Area under Both (ha)
1.	Agricultural land			
2.	ForestLand			
3.	Grazing Land			
4.	Wasteland			
5.	Water Bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

Area Under Surface Rights

S.N.	**Details**	**Area (ha)**
1.	Buildings	
2.	Infrastructure	
3.	Roads	
4.	Others (specify)	
	TOTAL	

(xii) Break-up of lease/project area as per mining operations.

(xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.

(xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (PM_{10}, $PM_{2.5}$, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil along with one-season met data.

(xv) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Values should be presented in comparison to desirable limits.

(xvi) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether

the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna, or if the project falls within 15 km of an ecologically sensitive area, then a comprehensive Conservation Plan should be prepared and furnished along with comments from the CWLW of the State Govt.

(xvii) Details of mineral reserves, geological status of the study are and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and final mine closure plan should also be shown in figures.

(xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.

(xix) Study on subsidence, measures for mitigation/prevention of subsidence, modelling subsidence prediction and its use during mine operation, safety issues.

(xx) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.

(xxi) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.

(xxii) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.

(xxiii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long?termmodelling studies on. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there us a declining trend of groundwater availability and/or if the area falls within dark/grey zone.

(xxiv) Impact of blasting, noise and vibrations.

(xxv) Impacts of mining on the AAQ, predictive modelling using the ISCST-3 (Revised) or latest model.

(xxvi) Impacts of mineral transportation ?within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.

(xxvii) Details of waste generation ?OB, topsoil ? as per the approved calendar programme, and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use. OBdump heights and terracing should based on slope stability studies with a max of 28^{o} angle as the ultimate slope. Sections of dumps (ultimate) (both longitudinal and cross section) with relation to the adjacent area should be shown.

(xxviii) Impact and management of wastes and issues of rehandling and backfilling and progressive mine closure and reclamation.

(xxix) Flow chart of water balance. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. Details of STP in colony and ETP in mine. Recycling of water to the max. possible extent.

(xxx) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine.

(xxxi) Risk Assessment and Disaster Preparedness and Management Plan.

(xxxii) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.

(xxxiii) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF given below) and selection of species (local) for the afforestation/plantation programme based on original survey/landuse.

Table 1: Stage-wise Landuse and Reclamation Area (ha)

S.N.	Land use Category	Present (1st Year)	5th Year	10th Year	20th year	24th Year (end of Mine life)*
1.	Backfilled Area (Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL	110	110	110	110	110

* Representative case as an example

Table 2: Stage-wise Cumulative Plantation

S.N.	YEAR*	Green Belt		External Dump		Backfilled Area		Others (Undisturbed Area/etc)		TOTAL	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	1st year										
2.	3rd year										
3.	5th year										
4.	10th year										
5.	15th year										
6.	20th year										
7.	25th year										
8.	30th year										
9.	34th year (end of mine life)										
10.	34-37th Year (Post-mining)									85	

* Representative case as an example

(xxxiv) Conservation Plan for the endangered/endemic flora and fauna found in the study area and for safety of animals visiting/residing in the study area and also those using the study area as a migratory corridor.

(xxxv) Conceptual Final Mine Closure Plan, post mining land use and restoration of land/habitat to pre- mining. A Plan for the ecological restoration of the area post mining and for land use should be prepared with detailed cost provisions.

Table 3: Post-Mining Landuse Pattern of ML/Project Area (ha)

S.N.	Land use during Mining	Land Use (ha)				
1.	External OB Dump	Plantation	Water Body	Public Use	Undisturbed	TOTAL
2.	Top soil Dump					
3.	Excavation					
4.	Roads					
4.	Built up area					
5.	Green Belt					
6.	Undisturbed Area					
	TOTAL	85				**110**

(xxxvi) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.

(xxxvii) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.

(xxxviii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.

(xxxix) Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xxxx) In built mechanism of self-monitoring of compliance of environmental regulations.

(xxxxi) Status of any litigations/ court cases filed/pending on the project.

(xxxxii) Submission of sample test analysis of:

Characteristics of coal - this includes grade of coal and other characteristics ?ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.

(xxxxiii) Copy of clearances/approvals ? such as Forestry clearances, Mining Plan Approval,

NOC from Flood and Irrigation Dept. (if req.), etc.

(A) FORESTRY CLEARANCE

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland In the FC	Balance area for which FC is yet to be obtained	Status of appl. for diversion of Balance forestland
		If more than one, provide details of each FC			

Copies of forestry clearance letters (all, if there are more than one)

(B) MINING PLAN APPROVAL

(B) MINING PLAN/PROJECT APPROVAL

Date of Approval of Mining Plan/Project Approval:

Copy of Letter of Approval of Mining Plan/Project Approval

(xxxxiv) Corporate Environment Responsibility:

a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

ANNEXURE-7

GENERAL CONDITIONS AND ADDITIONAL POINTS OF TOR

The following general points should be noted:

(i) All documents should be properly indexed, page numbered.

(ii) Period/date of data collection should be clearly indicated.

(iii) Authenticated English translation of all material provided in Regional languages.

(iv) After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, the proponent shall get the Public Hearing conducted as prescribed in the EIA Notification 2006 and take necessary action for obtaining environmental clearance under the provisions of the EIA Notification 2006.

(v) The letter/application for EC should quote the MOEF file No. and also attach a copy of the letter prescribing the TOR.

(vi) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.

(vii) The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated. Mining Questionnaire (posted on MOEF website) with all sections duly filled in shall also be submitted at the time of applying for EC.

(viii) General Instructions for the preparation and presentation before the EAC of TOR/EC projects of Coal Sector should be incorporated/followed.

(viii) The aforesaid TOR has a validity of two years only.

The following additional points are also to be noted:

(i) Grant of TOR does not necessarily mean grant of EC.

(ii) Grant of TOR/EC to the present project does not necessarily mean grant of TOR/EC to the captive/linked project.

(iii) Grant of TOR/EC to the present project does not necessarily mean grant of approvals in other regulations such as the Forest (Conservation) Act 1980 or the Wildlife (Protection) Act, 1972.

(iv) Grant of EC is also subject to Circulars issued under the EIA Notification 2006, which are available on the MOEF website: www.envfor.nic.in